PSYCHOLOGY

Faced with problems of discouraging complexity, its workers tried to fractionate them. Now the trend is toward placing the problems in their natural context

by Hadley Cantril

THE GOAL of psychology is to improve our understanding of experience and behavior. To account for the interplay of man's capacities, his hopes and fears, his aspirations and frustrations, his ceaseless striving, his manipulation of symbols, his unconscious value-judgments—to explain all these abstractions in naturalistic terms is clearly a task of unsurpassed complexity. The range of phenomena with which a psychologist can legitimately deal extends all the way from the chemical activities involved in the transmission of a nervous impulse to the search men make for the kingdom of God or the wars they wage in defense of ideologies. Psychologists today are actually trying to cover this whole range of phenomena.

Perhaps the best way to summarize briefly the development of psychology in the past half-century is to consider three major trends that appear to have taken place during that period. First, there has been a trend away from an atomistic approach toward the integrated study of the whole man. Second, there has been an increasing tendency to consider man and his environment together rather than as separate absolutes. Third, psychologists have sought more and more to simulate actual life situations in their laboratory experiments for the study of behavior.

IN 1900 psychology, the stepchild of philosophy and physiology, was only about 40 years old. As a late arrival among the sciences, it tried to model itself on the older disciplines. Much of the psychological research around the turn of the century appears to have been guided by a conscious attempt to apply methods that had proved successful in the physical sciences. The eagerness of psychological investigators to be "scientific" led many to follow rather blindly the scientific procedures that had gained status and acclaim elsewhere. There was an intense interest in separating experience and behavior into events that could be handled experimentally and were amenable to quantitative treatment. Thus Wilhelm Wundt of Leipzig, generally regarded as the founder of psychology, was carrying on an attempt to analyze experience into various elements, to determine the attributes of sensation and to discover laws of psychical relationships among the components of experience thus analyzed. The Wundtian tradition was transplanted to American soil by Edward B. Titchener at Cornell University. The methods pioneered by these two men had a tremendous impact on the development of experimental psychology in the U. S. and Europe, and for a long period psychologists devoted themselves to fractionating experience, taking the pieces apart, examining them and then fitting them together again.

Ultimately this approach led into a blind alley, and it is not hard to see now why it did: the investigators were taking apart what really belongs together. We now know that the elements of experience become meaningless when taken out of the total experiential process.

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Early in the century the Würzburg school of psychologists in Germany showed that the thought process could not be accounted for solely in terms of bundles of sensations and images; it seemed to be directed largely by the set or attitude of the individual. Later the Gestalt psychologists demonstrated that perception—the process involved in our awareness of the world in which we live—was more than the sum of its parts; that it depended upon the total pattern of relationships with which the organism was confronted at any one time.

Similarly in the study of the learning process experimental psychologists started with an atomistic approach but eventually outgrew it. Hermann Ebbinghaus, in his classical studies on memory which used nonsense syllables to rule out meanings, never got beyond the psychology of simple rote learning. The early experiments of Edward L. Thorndike and John B. Watson on the conditioning of white rats, which attempted to account for learning in terms of connections, also proved to have limited value in explaining the kind of learning that occurs in everyday life. Gradually larger segments of behavior were included in learning theory, as investigators saw more and more how much was being left out and were forced to expand their interpretation of what constituted learning. Today the more sophisticated learning theories in one way or another face the problems of consciousness, of unconscious wishes, of cognition and of the particular purposes of the organism involved in a particular situation.

It is significant that while psychologists have gradually been freeing themselves from their original ideal of scientifically "objective" experiments devoid of personal value-judgments, the physical scientists have been giving increasing recognition to the role played by human understanding and interpretation in research. Thus the psychologist, who has tried so hard not to let meaning or his own interpretation affect his results, is now being pushed by his former model, the physical scientist, to tell how the design of experiments and the interpretation of results in physics itself are

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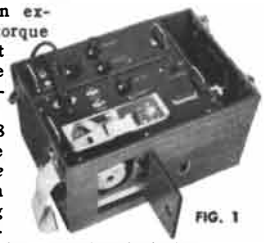
FIG. 1

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FIG. 2

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affected by the personal outlooks that inevitably permeate all research. The physicist Percy W. Bridgman, for example, argues that scientific proof is an individual matter, that there is a "private component" involved in all creative science. It is the business of the psychologist to investigate the nature and function of this private component.

LET US consider now the second trend in psychology—what might be called the trend away from dichotomies. In every science one of the marks of progress has been emancipation from absolutes, generally juxtaposed against other absolutes as independent constructs existing in their own right. In the past few decades psychology also has gradually become aware of the extent to which its own progress was being hamstrung by clinging to such dichotomies. We may mention four illustrations.

Subjective v. objective. Much of the early work in the psychology of perception was based on the explicit assumption that "subjective" factors could be disregarded and experience measured solely in "objective" terms. If we could learn enough about the stimulus "out there," and about the nature of the physiological reaction to it in our sense organs, we would have an understanding of our subjective experiences. Apparently this guide to investigation was adopted because it offered the easiest way to follow traditional scientific methods: the stimulus "out there" could be rigidly controlled and measured and the physiological processes themselves were amenable in some degree to laboratory investigation and control, whereas the so-called "subjective" factors, such as past experience, purpose or expectancies, were not amenable to scientific controls except in a very crude way. As a result, there was a widespread assumption that stimuli somehow existed in their own right, and that all we had to do was to study the effects of controlled changes in the stimulus on experience as reported.

But this naive separation of "subjective" from "objective" was increasingly seen to be false. The development of psychiatry, clinical psychology and social psychology showed that "subjective" factors, such as fixations, phobias or stereotypes, radically affected the meaning an individual could give to a stimulus. Hence the emphasis was reversed: it became essential to study the effect of "subjective" factors on what was experienced as "objectively" given. There is now a growing recognition that "subjective" factors and the stimuli outside the experiencing organism are not independent entities but each depends on the other for its very existence. For example, even the simplest perception, *e.g.*, the perception of a sphere, is in a large measure our own creation based on sets of assumptions which we have built up from past experience and which give the stimulus a certain meaning. It has become clear from recent laboratory experiments that we cannot tell *where* a thing is until we make some assumptions about *what* the thing is. The two perceptions are completely interdependent; neither would exist without the other. The total perception of a sphere, for example, depends on certain assumptions we bring to bear on the particular stimulus pattern that innervates our sense organ, *i.e.*, an assumption that the sphere is a ping-pong ball, a billiard ball, the moon or the sun.

Stimulus v. response. Rather early in this century John Dewey and James R. Angell pointed out the futility of regarding a stimulus as something different from and independent of a response. They emphasized that in order to understand behavior, the total activity

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of the organism, including the goal toward which that activity is directed, must be considered. Their point of view, which became known as American functionalism, stood in sharp contrast to the structuralism of Wundt and Titchener. More and more the realization has grown in psychology that both the stimulus and response are part of a total ongoing activity, and that the activity can be understood only by considering the purposes of the organism, its past experience, temperamental and genetic factors, and the particular meaning the situation has for the organism at a particular time and in a particular place.

Nature v. nurture. The turn of the century found a number of psychologists discussing the nature of human nature. The most important thinking on this subject was taking place in a seminar of medical students in Vienna led by Sigmund Freud. Freud, whose brilliant insights had discovered the operation of

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man's unconscious psychic processes, posited certain basic human instincts as the dynamic motivations of these processes. In England, and later in America, William MacDougall vigorously championed another theory of instincts. For a number of years a battle raged as to how much of man's behavior was due to his innate nature and how much to the environment around him. Eventually this debate was made meaningless by the accumulating studies of actual human societies. The documented accounts of behavior in various cultures by Bronislaw Malinowski and other cultural anthropologists forced serious questioning of any doctrine that assumed that instincts determined the specific directions of man's behavior. Psychologists were compelled to take into account a cultural relativity. This concept, together with the evidence from biology of the complete interdependence of the organism and the environment, has brought psychologists to a more sophisticated search for the interrelations of behavior and environment. Many psychologists today are using a "field theory" concept in their accounts of learning, purposive behavior, group dynamics and so on. But physicists are likely to be considerably puzzled by the way the concept of "field" is currently employed in psychology. They will probably notice that the psychologist has not yet rid himself of the habit of considering separate entities reacting "in" or "to" a field. Psychology, in other words, has not yet completely emancipated itself from an elementarism that considers the environment as something outside the organism.

Individual v. social. In the area of social and political psychology the century was ushered in with a controversy as to whether man's social behavior and political institutions could best be understood through a study of the individual human being or a study of the institutional and ideological structures themselves. As we look back on the controversy now, it seems clear that each side was fighting a straw man. The painstaking investigations of such men as G. H. Mead, C. H. Cooley, Karl Mannheim, Jean Piaget and F. C. Bartlett made it apparent that it was meaningless on the one hand to think of an individual divorced from social institutions and group loyalties, or, on the other, to try to separate these from their concrete components, which consisted of the common assumptions and actions of groups of individuals.

THE THIRD trend we have to consider is the recent return of many psychologists to the laboratory, this time to study much more inclusive problems than the fragmentary ones that occupied psychologists at the beginning of the century. The piecemeal approach of early experimental psychology generated a widespread impatience with experimental methods. Experimentation

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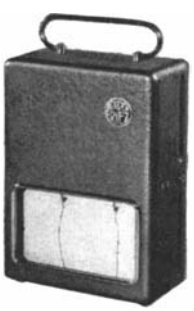

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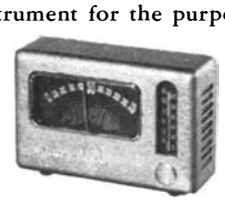

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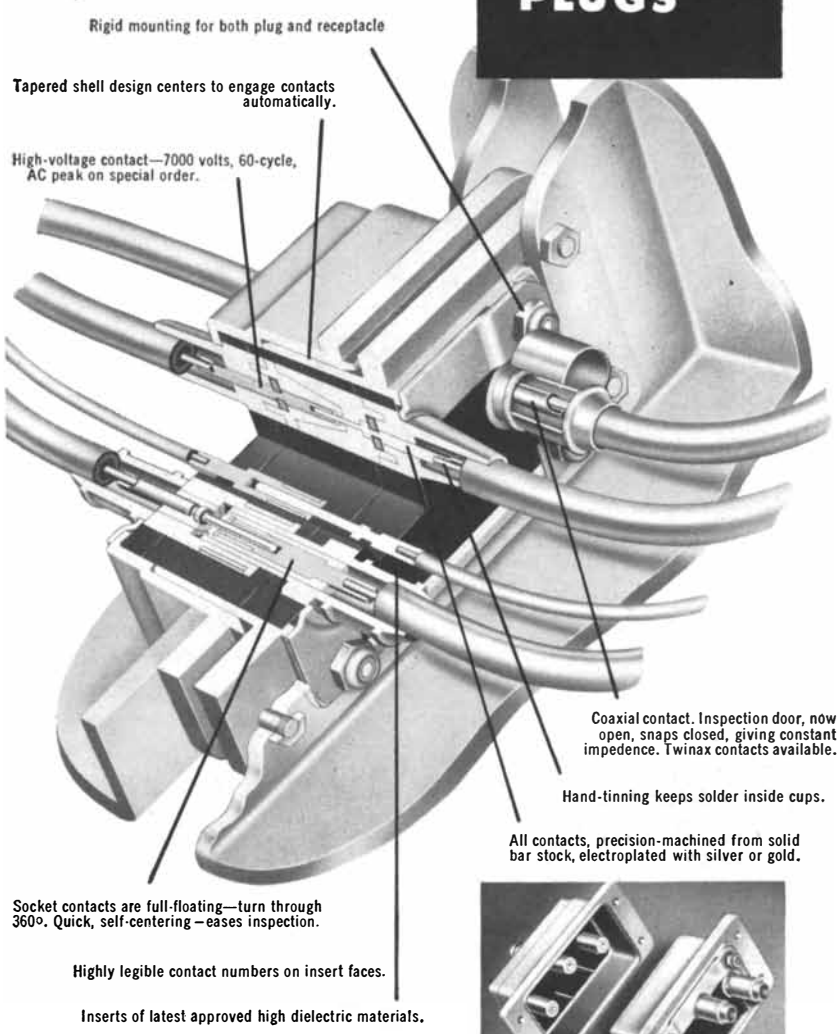
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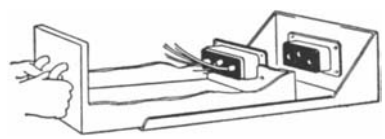

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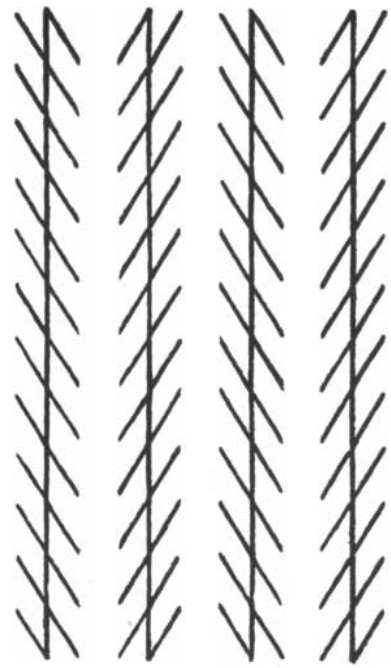

OPTICAL ILLUSION shows effect of experience upon sensory perception. Vertical lines which appear to slant toward each other are parallel.

was not leading to an understanding of man's anxieties and aspirations, his loyalties, his persistence in the face of obstacles. Many psychologists therefore turned to methods other than those of the laboratory: case studies, clinical diagnosis, attitude and opinion testing, the construction of tests to shed light on man's capacities and temperament, the study of communications, of group structure, of propaganda and so on. From these investigations many valuable hunches and theories were formulated and more adequate problems were posed. But as the data obtained from investigations of actual life situations accumulated, there developed an urge to systematize the data and to verify formulations and observations in some experimental way. A number of psychologists have therefore returned to the laboratory with new problems. They are trying to bring into the laboratory situations comparable to those encountered in life, to keep in rather than to rule out those aspects of experience and behavior that characterize lifelike occurrences. New quantitative methods, such as factor analysis and the analysis of co-variance, have been devised to handle these more complicated situations.

Psychology has of course found applications in many fields and on an increasing scale in our half-century. The tests of the clinical psychologist have been of enormous usefulnesss to the psychiatrist; the Rorschach Ink Blot Test and the newer Thematic Apperception Test developed by H. A. Murray and his associates have become standard diagnostic instruments. Psychology has en-

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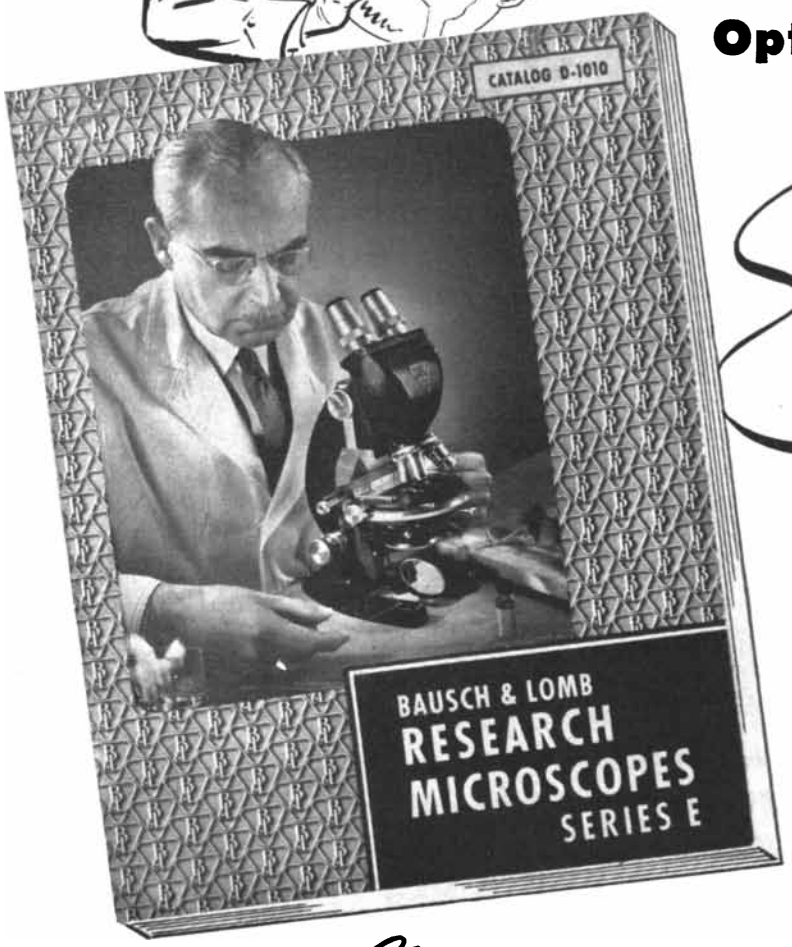

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THE TRENDS cited in this review, and others that could be mentioned, seem to indicate that psychology is undergoing a revolution. Its culmination is likely to be an acceptance of the view that any experience or any behavior is what Dewey and A. F. Bentley have recently called a "transactional" process. The psychology of the future will, I believe, become increasingly aware of the necessity of investigating all behavior and experience as transactional processes involving the total organism-environment situation, including within the "now" the effects of the past and the expectations of the future.

Hadley Cantril has worked in the fields of social psychology, the psychology of personality, sensory perception, public opinion and mass communication. He has served as director of the tensions project of UNESCO. He is now professor of psychology at Princeton University.

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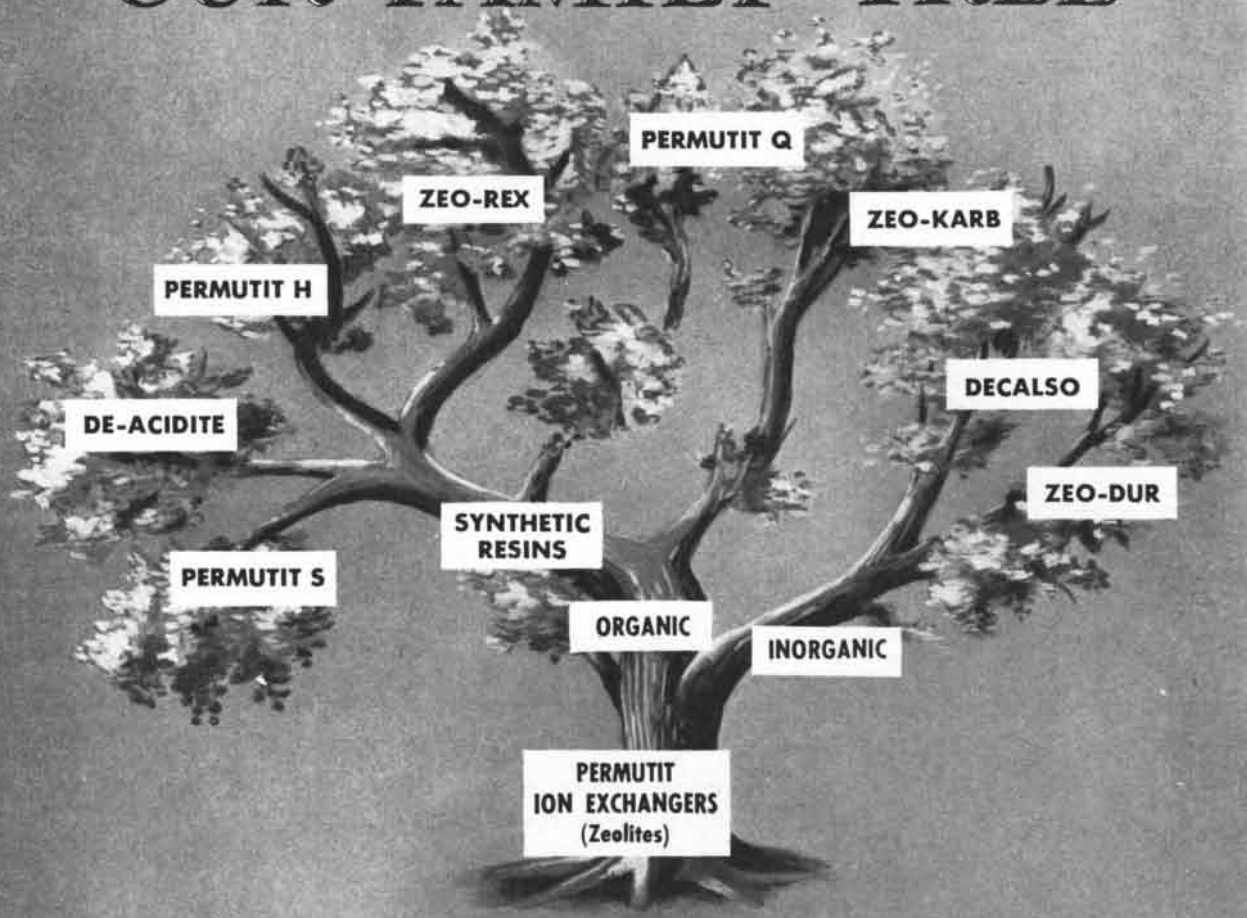

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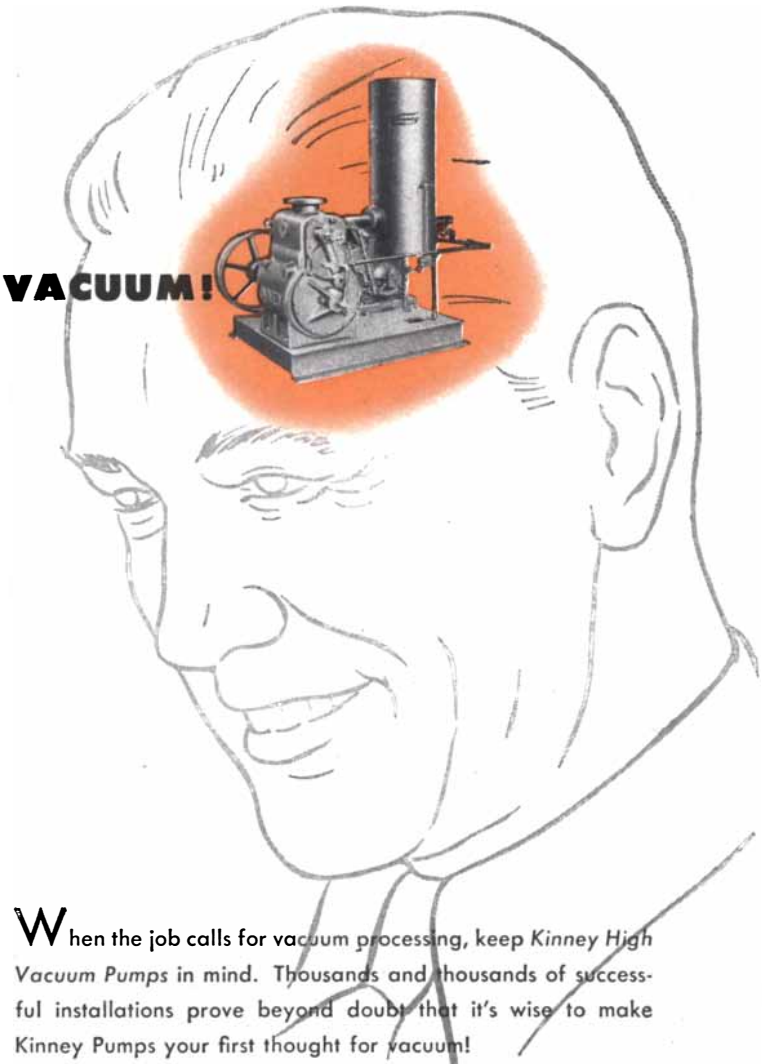

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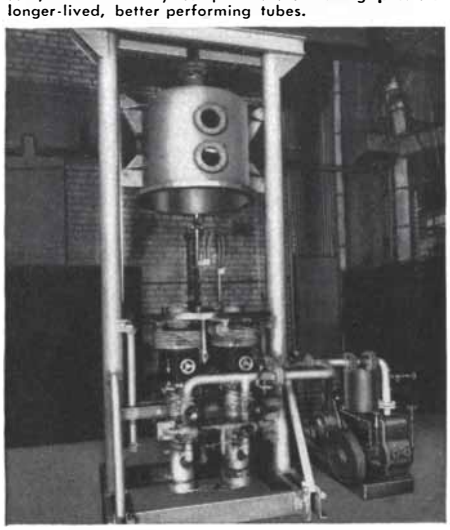

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